

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014520 A1

(51) International Patent Classification⁷: **C07C 67/38**

(21) International Application Number:
PCT/EP2004/007059

(22) International Filing Date: 28 June 2004 (28.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03077340.2 25 July 2003 (25.07.2003) EP

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AI, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GI, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

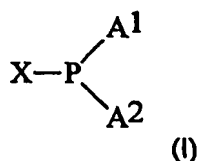
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **PROCESS FOR THE CARBONYLATION OF CONJUGATED DIENES USING A PALLADIUM CATALYST SYSTEM**



both A¹ and A² are part of an at least 5-membered ring including the phosphorus atom, and X represents an aliphatic or aromatic carbon atom which can be connected to one or more aliphatic or aromatic carbon atoms or X is part of an organic bridging group connecting another identically or differently substituted phosphorus atom, and said source of anions (c) containing a carboxylic acid and, optionally, halide ions, wherein said process ligand is fed continuously or periodically to the process as ligand make-up at a temperature 50°C or lower.

(57) Abstract: A process is provided, in particular a continuous process for the carbonylation of butadiene by reacting the butadiene with carbon monoxide and a hydroxyl group-containing compound in the presence of a palladium catalyst system in a reaction zone to form a reaction mixture, said catalyst system comprising (a) a source of palladium cations, (b) a mono-, bi- or multidentate phosphine ligand, containing at least one phosphorus atom which is directly bound to two or three aliphatic carbon atoms, as process ligand to produce a palladium-phosphine ligand complex catalyst, and (c) a source of anions, said process ligand (b) containing the moiety shown in formula (I), wherein A¹ and A² each represent an aliphatic carbon atom which can be connected to one or more aliphatic or aromatic carbon atoms or

WO 2005/014520 A1